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NOTES ON GEOGRAPHIC DISTRIBUTION

Cnidaria, Hydrozoa: latitudinal distribution of hydroids along the fjords region of southern Chile, with notes on the world distribution of some species.

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The coast of continental Chile extends over almost 4,200 km and covers a large part of the southeast Pacific. While the coastline between Arica (18°20' S) and Chiloé Island (ca. 41°30' S) is more or less straight, the region between Puerto Montt (ca. 41°30' S) and Cape Horn (ca. 56° S) is highly structured and presents a large number of islands, channels and fjords. This extension is formed by two parallel mountain ranges, the high Andes on Chile's eastern border, and the coastal mountains along its western edge which, in the area of Puerto Montt, drop into the ocean with their summits, forming the western channels and islands, while the Andes mountain range constitutes the continental fjords. The Chilean oceanographic institute SHOA calculated that the thousands of islands, channels and fjords enlarge the coast of this region to a length of almost 90,000 km (map scale).

During the last three decades, an important number of papers dealt with the biogeography of Chilean benthic invertebrates. While most studies treated a single taxon (e.g. Moyano 1991; Desqueyroux-Faúndez 1994; Ojeda et al. 2000; Häussermann and Försterra 2005; Montiel et al. 2005; Häussermann 2006), some summarize available data on biogeography and oceanographic processes (e.g. Viviani 1979; Brattström and Johanessen 1983; Castilla et al. 1993; Lancellotti and Vasquez 1999; Fernandez et al. 2000; Camus 2001). Most studies have proposed two main biogeographic regions within Chile, the Peruvian or warm-temperate Province between the Peninsula Illescas (or Bayovar) (ca. 6° S) and Chiloé Island, and the Magellanic or cold-temperate Province, between Chiloé Island and Cape Horn. Viviani (1979) and Pickard (1971) subdivided the Magellanic Province into three regions: the Northern Patagonian Zone, from Puerto Montt to the Peninsula Taitao (ca. 46°–47° S), the Central Patagonian Zone to the Straits of Magellan (ca. 52°–53° S), and the Southern Patagonian Zone south of the Straits of Magellan. A recent study, including a wide set of invertebrates from the intertidal to 100 m depth (Lancellotti and Vasquez 1999), negates the widely assumed faunal break at 42° S, and proposes a Transitional Temperate Region between 35° and 48° S, where a gradual but important change in the species composition occurs.

Since 2005, in the framework of an inventory of the benthic biodiversity of the Chilean fjords region, we have organized a series of four, mainly vessel-based expeditions ("Huinay Fiordos 1 to 4") with three to seven participants each (Försterra et al. 2006; Willenz et al. 2007): the first focused on Chiloé Island and Guaitecas Archipelago, while the second and third took us to the fjords and channels of the Central Patagonian Zone (48°–52° S), and the fourth again to the Northern Patagonian Zone (encompassing the Chiloé Island, Chaitén, and Raul Marin Balmaceda). Due to the remoteness and inaccessibility of the more exposed channels and islands of the Northern and Southern Patagonian Zone, no or a very few sampling could be carried out in these areas. Additional hydroid samples were collected during a continuous survey of the benthic invertebrate fauna of fjord Comau, and some results are already available in Galea et al. (2007). A map of the studied area with the location of collection sites for hydroids is available in Figure 1.

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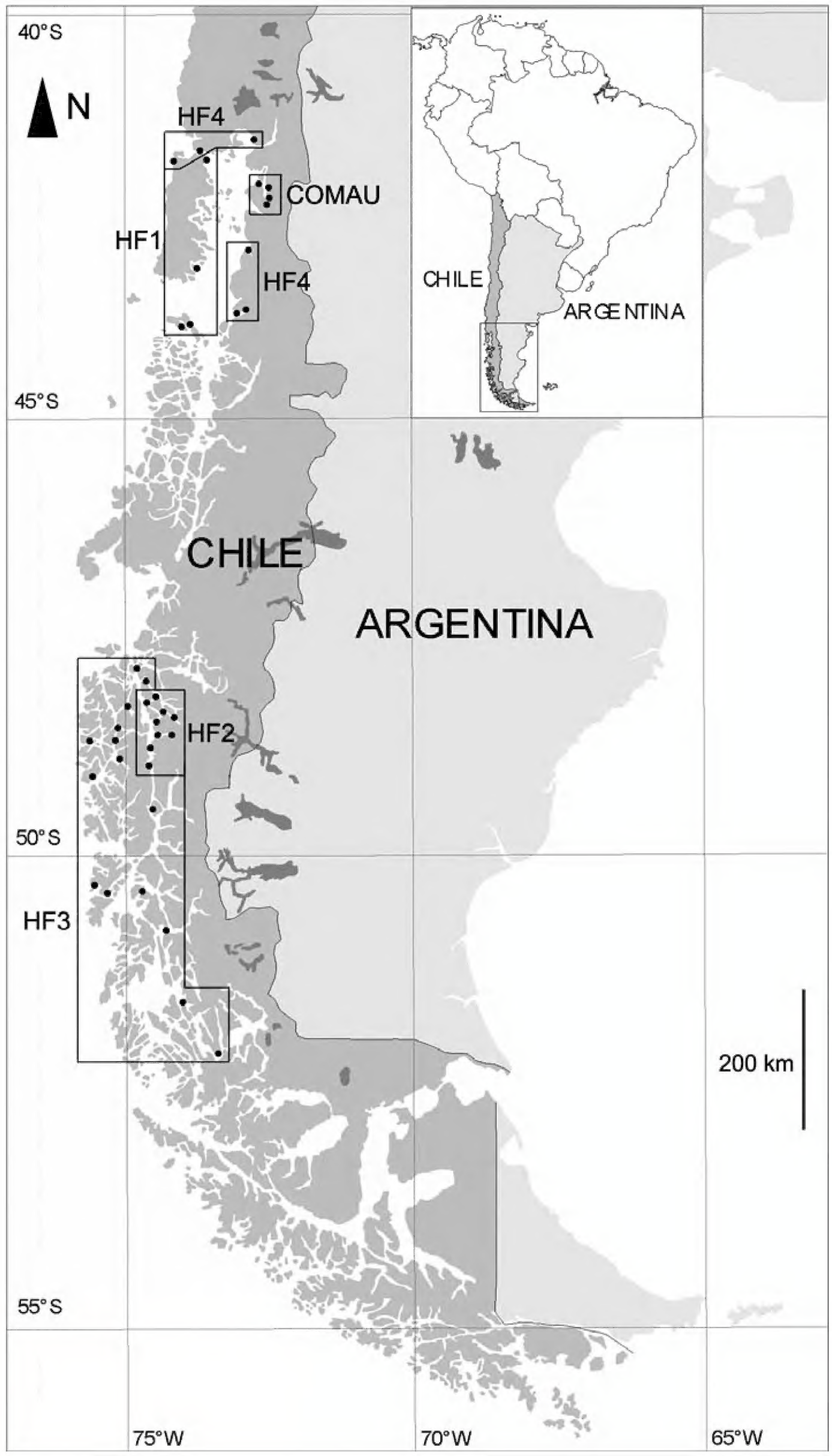

Figure 1. Map of the explored areas during "Huinay Fiordos 1–4" Expeditions and the fjord Comau, showing location of collection sites for hydroids.

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A total of 57 species of hydroids were found. They were assigned to six families of athecates and thirteen families of leptothecates. A list of species and their biogeographical distribution are summarized in Table 1. The latitudinal distribution along the studied area is presented in Figure 2. The lesser known species are illustrated in Figures 3-4.

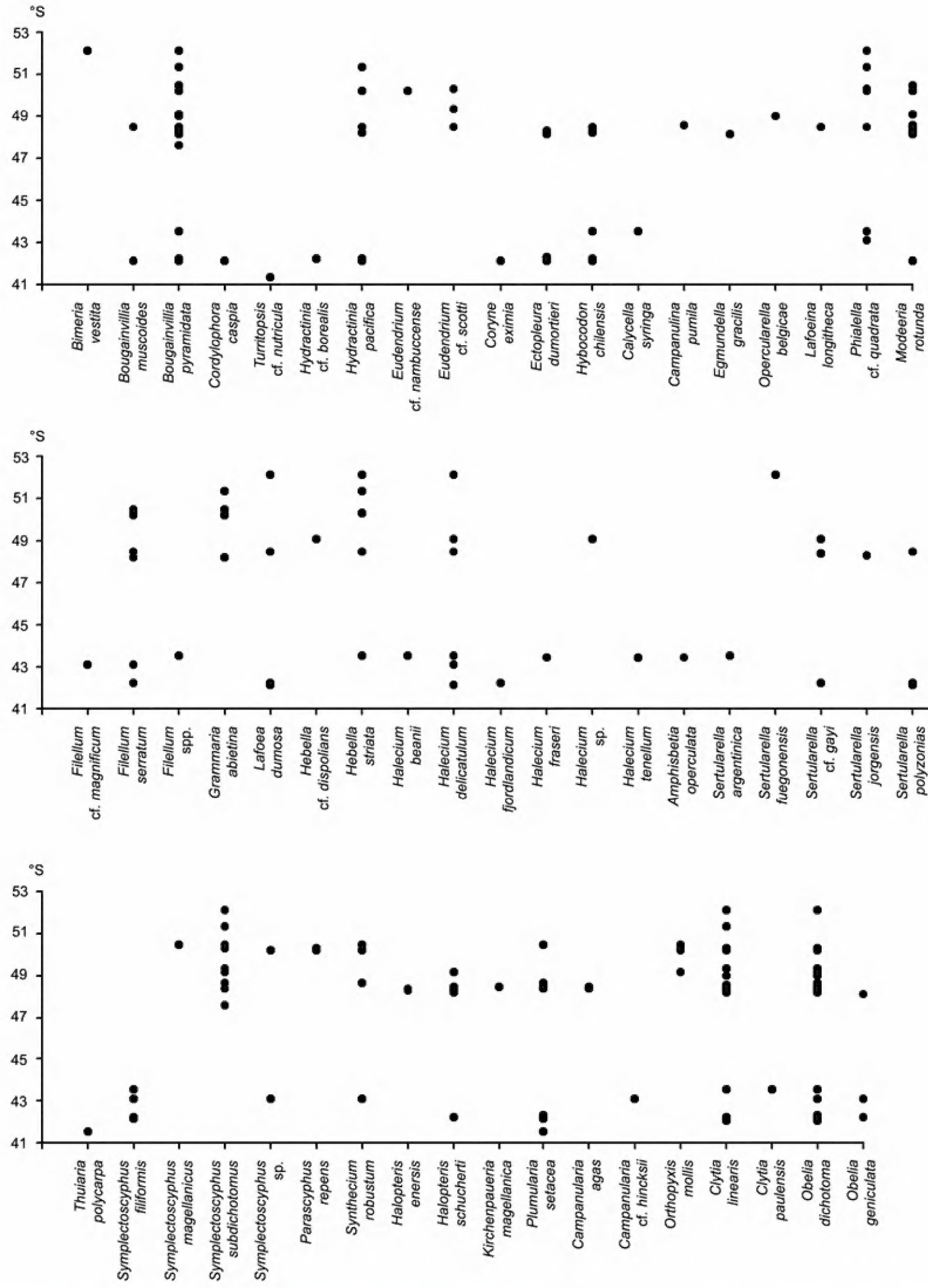

Figure 2. Latitudinal distribution of hydroid species within the studied area. No sampling has been carried out between 43°50' and 48°10' S.

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Table 1. List of families, genera and species of hydroids and their biogeographical distribution. Abbreviations: PSA – Pacific coasts of South America, ASA – Atlantic coasts of South America, SAI – sub-Antarctic islands, MAG – Magellan area, ANT – Antarctica, BP – bipolar distribution, SC – scattered records, COS – cosmopolitan.

Families, genera and species	Records from Chile	Biogeographical distribution
Bougainvilliidae Luetken, 1850		
Bimeria vestita Wright, 1850	Calbuco (Hartlaub 1905), Canal Vicuña (Galea 2007)	COS
Bougainvillia muscoides (M. Sars, 1846)	Fjord Comau, Canal Fallos (Galea 2007)	SC
Bougainvillia ? *pyramidata* (Forbes & Goodsir, 1851) [possibly *B. muscus* (Allman, 1863)]	Roughly from 42°10' to 52°10' S (Galea 2007)	SC
Oceaniidae Eschscholtz, 1829		
Cordylophora caspia (Pallas, 1771)	Fjord Comau (Galea 2007)	COS
Turritopsis cf. *nutricula* McCrady, 1859	Lenca (Galea et al. in press)	COS
Hydractiniidae L. Agassiz, 1862		
Hydractinia cf. *borealis* (Mayer, 1900)	Fjord Comau (Galea 2007)	BP
H. pacifica Hartlaub, 1905	Calbuco (Hartlaub 1905), roughly between 42°10' and 51°40' S (Galea 2007)	PSA, SAI
Eudendriidae L. Agassiz, 1862		
Eudendrium cf. *nambuccense* Watson, 1985	Canal Copihue (Galea 2007)	SC
E. cf. *scotti* Puce, Cerrano & Bavestrello, 2002	Canals Fallos and Pasaje, Paso del Abismo (Galea 2007)	PSA, ANT
Corynidae Johnston, 1836		
Coryne eximia Allman, 1859	Fjord Comau (Galea 2007)	COS
Tubulariidae Allman, 1864		
Ectopleura dumortieri (van Beneden, 1844)	Roughly between 42° and 48° S (Galea 2007)	COS
Hybocodon chilensis Hartlaub, 1905	Calbuco (Hartlaub 1905), roughly between 42°10' and 48°50' S (Galea 2007)	SC
Campanulinidae Hincks, 1868		
Calycella syringa (Linnaeus, 1767)	Canal Betecoi (Galea 2007)	COS
Campanulina pumila (Clark, 1875)	Angostura Inglesa (Galea 2007)	SC
Egmundella gracilis Stechow, 1921	Isla van der Meulen (Galea 2007)	BP
Lafoeina longitheca Jäderholm, 1904	Canal Fallos (Galea 2007)	PSA, SAI, ANT
Opercularella belgicae (Hartlaub, 1904)	Isla Lavinia (Galea 2007)	PSA, ASA, SAI, MAG, ANT
Phialellidae Russell, 1953		
Phialella cf. *quadrata* (Forbes, 1848)	Calbuco (Hartlaub 1905, as *Campanulina chilensis*), Coquimbo Bay, north of Golfo de Ancud, Strait of Magellan, Seno Ultima Esperanza (Leloup 1974, as *C. chilensis*), and roughly between 43° and 52° S (Galea 2007)	COS
Tiarannidae Russell, 1940		
Modeeria rotunda (Quoi & Gaimard, 1827)	Canal Chacao, Golfo de Ancud, Seno Reloncavi (Leloup 1974), and roughly between 42°10' and 50°50' S (Galea 2007)	COS
Lafoeidae Hincks, 1868		
Filellum cf. *magnificum* Peña et al., 2004	Piedra Lile, Isla Laitec (Galea 2007)	PSA, ANT
F. serratum (Clarke, 1879)	Canal Smyth (Hartlaub 1905, as *Lafoëa serrata*), Golfo de Ancud (Leloup 1974), and roughly between 42°10' and 50°50' S (Galea 2007)	COS
Filellum spp.	North-west of Melinka (Galea 2007)	-
Grammaria abietina (M. Sars, 1850)	Magellan Strait (Hartlaub 1905, as *G. stentor*), Canals Messier, Artilleria, Pitt Chico, and Sanviento (Galea 2007)	BP
Lafoea dumosa (Fleming, 1828)	Canal Trinidad (Hartlaub 1905), Golfo de Ancud, Strait of Magellan (Leloup 1974), and roughly between 42°10' and 52°10' S (Galea 2007)	COS (+ ANT)
Hebellidae Fraser, 1912		
Hebella cf. *dispolians* (Warren, 1909)	Isla Camello (Galea 2007)	SC
H. striata Allman, 1888	Canal Smyth, Long Island, Puerto del Hambre (Hartlaub 1905), Golfo de Ancud, Canal Chacao (Leloup 1974), and roughly from 43°50' to 52°10' S (Galea 2007)	SC
Haleciidae Hincks, 1868		
Halecium beanii (Johnston, 1838)	North-west of Melinka (Galea 2007)	COS
H. delicatulum Coughtrey, 1876	Puerto del Hambre, Punta Arenas (Hartlaub 1905, both as *H. flexile* and *H. delicatulum*), Tocopilla, north of Golfo de Ancud (Leloup 1974), and between 43°10' and 52°10' S (Galea 2007)	COS (+ ANT)
H. fjordlandicum Galea, 2007	Fjord Comau (Galea 2007)	PSA
H. fraseri Ralph, 1958	Golfo de Ancud (Leloup 1974), fjord Piti Palena (Galea et al. in press)	BP
H. tenellum Hincks, 1861	Isla Navarino, Canal Smith (Hartlaub 1905), Canal Fitzroy (Jäderholm 1910), Canal Chacao, Golfo de Ancud, Magellan Strait (Leloup 1974), fjord Piti Palena (Galea et al. in press)	COS
Halecium sp.	Isla Camello (Galea 2007)	-

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Table 1. Continued.

Sertulariidae Lamouroux, 1812		
Amphisbetia operculata (Linnaeus, 1758)	Guaitecas Islands (Jäderholm 1904a), Magellan Strait (Hartlaub 1905, as *Sertularia operculata*), Isla de Chiloé, Canal Chacao, Golfo de Ancud, Golfo Corcovado (Leloup 1974), Raul Marin (Galea et al. in press)	COS
Sertularella argentinica El Beshbeeshy, 1991	North of Melinka (Galea 2007)	PSA, ASA
S. fuegonensis El Beshbeeshy, 1991	Canal Vicuña (Galea 2007)	SC
S. cf. *gayi* (Lamouroux, 1821)	Fjord Comau, Canal Adalberto, Isla Camello (Galea 2007)	SC
S. jorgensis El Beshbeeshy, 1991	Canal Farquhar (Galea 2007)	PSA, ASA
S. polyzonias (Linnaeus, 1758)	Canal Trinidad, Punta Arenas, Strait of Magellan, Juan Fernández (Hartlaub 1905), Seno Reloncavi, Golfo de Ancud (Leloup 1974), and roughly between 42°10' and 49°11' S (Galea 2007)	COS
S. robusta Coughtrey, 1876	Canal Calbuco (Leloup 1974, as *S. microtheca*), Golfo de Ancud (Leloup 1974, as *S. robusta*), and roughly between 43°50' and 50°50' S (Galea 2007)	COS
Symplectoscyphus filiformis (Allman, 1888)	Puerto del Hambre (Hartlaub 1905), and roughly between 42°09' and 43°56' (Galea 2007)	PSA, ASA
S. magellanicus (Marktanner-Turneretscher, 1890)	Canal Pitt Chico (Galea 2007)	PSA, ASA, SAI, MAG
S. subdichotomus (Kirchenpauer, 1884)	Punta Arenas (Hartlaub 1905, as *Sertularella subdichotoma*), Corral, Guaitecas Islands (Jäderholm 1904a), Calbuco, Canal Smyth, Strait of Magellan, Tocopilla, Canal Chacao, Seno Reloncavi, Golfo Corcovado (Leloup 1974), and roughly between 48°58' and 52°09' S (Galea 2007)	SC
Symplectoscyphus sp.	Piedra Lile (Isla Laitec), Las Hermanas (Raul Marin), Canal Copihue (Galea 2007)	-
Thuiaria polycarpa Kirchenpauer, 1884	Valparaíso (Kirchenpauer 1884), Canal Chacao (Leloup 1974, as *Parathuiaria polycarpa*), Puñihuil, Isla de Chiloé (Galea et al. in press)	PSA
Thyroscyphidae Stechow, 1920		
Parascyphus repens (Jäderholm, 1904)	Canals Copihue and Pasaje (Galea 2007)	PSA, ASA, SAI, MAG
Syntheciidae Marktanner-Turneretscher, 1890		
Synthecium robustum Nutting, 1904	Calbuco (Hartlaub 1905, as *S. chilense*), Golfo de Ancud, Seno Reloncavi (Leloup 1974), and roughly between 43°10' and 50°50' S (Galea 2007)	PSA, ASA, MAG
Halopteridiidae Millard, 1962		
Halopteris enersis Galea, 2006	Canals Farquhar and Adalberto (Galea 2007)	PSA
H. schucherti Galea, 2006	Roughly between 42°22' and 49°11' S (Galea 2007)	PSA
Kirchenpaueriidae Stechow, 1921		
Kirchenpaueria magellanica (Hartlaub, 1905)	Tierra del Fuego, Ushuaia (Hartlaub 1905, as *Plumularia magellanica*), Canal Castillo (Galea 2007)	BP
Plumulariidae Hincks, 1868		
Plumularia setacea (Linnaeus, 1758)	Guaitecas Islands (Jäderholm 1904a), Talcahuano, Calbuco (Hartlaub 1905), from Tocopilla to Strait of Magellan (Leloup 1974), and roughly between 41°49' and 50°50' S (Galea 2007)	COS
Campanulariidae Hincks, 1868		
Campanularia agas Cornelius, 1982	Calbuco (Hartlaub 1905, as *C. laevis*), Canals Adalberto and Castillo (Galea 2007)	PSA, ASA, MAG, ANT
C. cf. *hincksii* Alder, 1856	Piedra Lile, Isla Laitec (Galea 2007)	COS
C. mollis (Stechow, 1919)	Canal Smyth (Hartlaub 1905, as *C. tincta*), Tierra del Fuego, Puerto Pantalon (Hartlaub 1905, as *Eucopella crenata*), Tocopilla (Leloup 1974), and roughly between 49°11' and 50°50' S (Galea 2007, as *Orthopyxis mollis*)	SC
C. linearis (Thornely, 1900)	Roughly from 42° to 52° S (Galea 2007)	COS
Clytia paulensis (Vanhöffen, 1910)	Melinka, Canal Betecoi (Galea 2007)	COS
Obelia dichotoma (Linnaeus, 1758)	Guaitecas Islands, Melinka (Jäderholm 1904a, as *Campanularia obtusidens*), Tocopilla, Coquimbo and San Vincente Bays, Seno Reloncavi, Golfo de Ancud (Leloup 1974), and roughly between 42° and 52° S (Galea 2007)	COS
O. geniculata (Linnaeus, 1758)	Canal Beagle (Hartlaub 1904), Corral (Jäderholm 1904a), Valparaíso, Talcahuano, Canal Smyth, Strait of Magellan, Islas Navarino and Lennox (Hartlaub 1905), Tocopilla, Archipelago de los Chonos (Leloup 1974), and roughly from 43°10' to 48°10' S (Galea 2007)	COS

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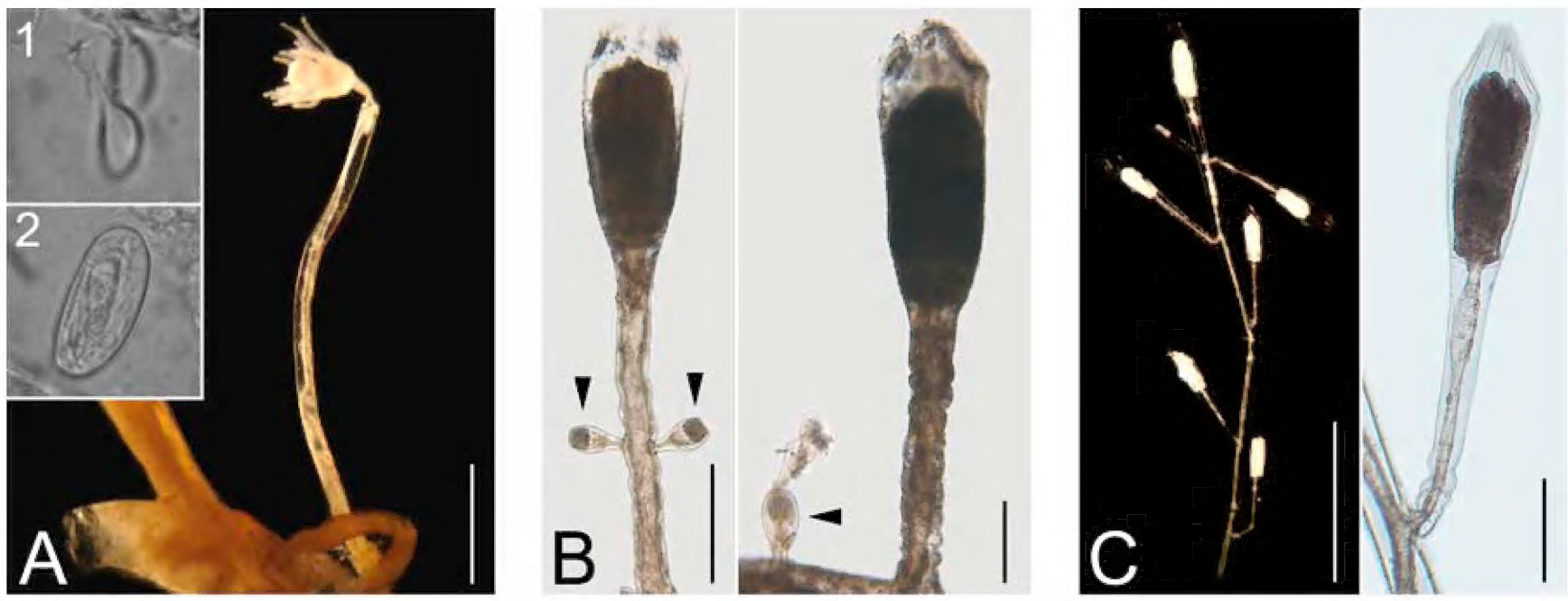

Figure 3. A: *Eudendrium* cf. *scotti*, scale bar 1 mm; insert 1 – discharged microbasic euryteles from tentacles; insert 2 – undischarged macrobasic euryteles from hydranth body. B: *Egmundella gracilis*, showing nematothecae (arrowheads) on both the hydrothecal pedicel (left) and stolon (right); scale bars 200 µm (left), 100 µm (right). C: *Opercularella belgicae*, colony (left, scale bar 1 mm) and detail of hydrotheca (right, scale bar 200 µm). D: *Lafoeina longitheca*, showing two hydrothecae and a nematotheca (arrowhead); scale bar 200 µm. E: *Phialella* cf. *quadrata*, whole colony (left, scale bar 200 µm); insert 1 – hydrotheca, scale bar 100 µm; insert 2 – gonotheca, scale bar 200 µm. F: *Filellum* cf. *magnificum*, hydrotheca, scale bar 500 µm. G: *Halecium fjordlandicum*, showing the sheath of large macrobasic mastigophores around hydranth body (arrowhead and detail in insert). H: *Halecium fraseri*, whole colony, scale bar 1 cm; insert – female gonotheca, scale bar 300 µm. I: *Sertularella argentinica*, whole colony, scale bar 2 cm; insert – shape of hydrotheca.

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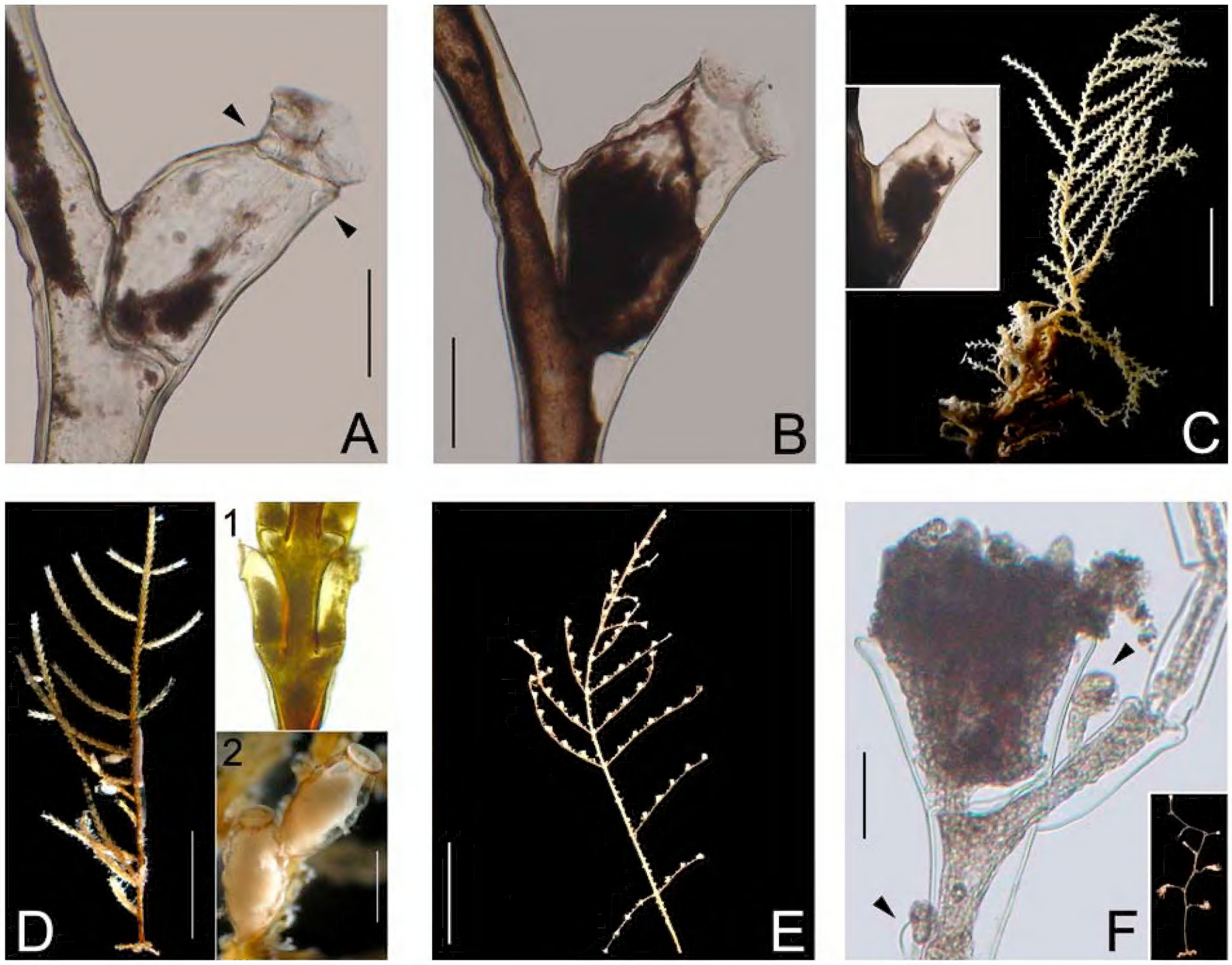

Figure 4. A: *Sertularella fuegonensis*, hydrotheca, showing internal projections of perisarc below aperture (arrowheads), scale bar 200 µm. B: *Sertularella jorgensis*, hydrotheca, scale bar 200 µm. C: *Symplectoscyphus magellanicus*, whole colony, scale bar 2 cm; insert – shape of hydrotheca. D: *Thuiaria polycarpa*, whole colony, scale bar 1 cm; insert 1 – a pair of hydrothecae; insert 2 – two gonothecae, scale bar 1 mm. E: *Halopteris enersis*, whole colony, scale bar 4 mm. F: *Kirchenpaueria magellanica*, cladial hydrothecate segment, showing nematothecae (arrowheads), scale bar 50 µm; insert – shape of colony.

The most represented family is Sertulariidae, with twelve species, followed by Campanulariidae with seven species, Haleciidae with six species, and both Campanulinidae and Lafoeidae with five species each. The remaining families are more scarcely represented, with lesser species, varying between one and three.

Eight hydroids are restricted to South America, but only *Halecium fjordlandicum* (Figure 3G), *Halopteris enersis* (Figure 4E), *H. schucherti, Kirchenpaueria magellanica* (Figure 4F), and *Thuiaria polycarpa* (Figure 4D) were found, for instance, exclusively on the Pacific coast of southern Chile (Galea et al. 2007; Galea 2007, see also Table 1). The remaining three species were recorded on both the Atlantic and Pacific coasts of the continent, i.e. *Sertularella argentinica* (Figure 3I) (El Beshbeeshy 1991; Galea 2007), *S. jorgensis* (Figure 4B) (El Beshbeeshy 1991; Galea 2007), and *Symplectoscyphus filiformis* (Hartlaub 1905; Blanco 1982; Galea 2007).

Additional species, i.e. *Hydractinia pacifica*, *Symplectoscyphus magellanicus* (Figure 4C), *Parascyphus repens*, *Synthecium robustum* and *Campanularia agas*, are found not only along the coasts of South America, but also on some sub-

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Antarctic islands and/or Antarctica. *Hydractinia pacifica* was found on the Pacific coast of Chile (Hartlaub 1905; Galea 2007) and the Kerguelen Islands (Stepanjants 1979). *Symplectoscyphus magellanicus* is known from the Argentine Patagonia (Vervoort 1972; Blanco 1984; El Beshbeeshy 1991), Falkland Islands (Hartlaub 1905, as *Sertularella affinis*, Stepanjants 1979), south-western Atlantic from an area comprised between Tierra del Fuego, Isla de Los Estados, Falkland Islands, and Burdwood Bank (Vervoort 1972), Magellan Strait (Marktanner-Turneretscher 1890; Vervoort 1972; El Beshbeeshy 1991), and the Central Patagonian Zone of Chile (Galea 2007). *Parascyphus repens* was previously found from the Rio Negro, Argentina (Blanco 1984), Crozet Islands (Stepanjants 1979; El Beshbeeshy 1991), Tierra del Fuego (Jäderholm 1904b, as *Thyroscyphus repens*), and Chile (Leloup 1974; Galea 2007). Available records of *Synthecium robustum* are from Argentina (Vervoort 1972; Stepanjants 1979; El Beshbeeshy 1991; Genzano and Zamponi 2003), southern Chile (Hartlaub 1905, as *S. chilense*, Leloup 1974; Galea 2007), and an area comprised between Tierra del Fuego, Magellan Strait, Falkland Islands, and Burdwood Bank (Nutting 1904; Ritchie 1907; Vervoort 1972). Only *C. agas* Cornelius, 1982 penetrates into the Antarctic waters (Vanhöffen 1910, as *C. laevis* Hartlaub 1905), but it was equally recorded from Argentina (El Beshbeeshy 1991, as *C. laevis*, and Genzano and Zamponi 2003), Chile (Hartlaub 1905; Leloup 1974, as *C. laevis*, Galea 2007) and Magellan Strait (Vervoort 1972, as *C. laevis*).

Four species are mainly known from Antarctica, i.e. *Eudendrium* cf. *scotti* (Figure 3A) (Puce et al. 2002), *Opercularella belgicae* (Figure 3C) (Hartlaub 1904; Hickson and Gravely 1907; Vanhöffen 1910; Ritchie 1913; Billard 1914; Totton 1930; Briggs 1938; Naumov and Stepanjants 1962; Stepanjants 1972; 1979, Peña Cantero et al. 2004), *Lafoeina longitheca* (Figure 3D) (Jäderholm 1904b; Hickson and Gravely 1907; Ritchie 1913; Billard 1914; Naumov and Stepanjants 1962; Stepanjants 1972; 1979; Peña Cantero et al. 2004) and *Filellum magnificum* (Figure 3F) (Peña Cantero et al. 2004). Moreover, *O. belgicae* was additionally recorded from several sub-Antarctic regions, such as the Kerguelen Islands (Millard 1977) and Magellan Strait (Vervoort 1972, as *Opercularella* sp.), but also from temperate regions, e.g. Mar del Plata, Argentina (Genzano 1995; Genzano and Zamponi 2003), and southern Chile (Leloup 1974; Galea 2007). *Lafoeina longitheca* was equally found from the Kerguelen Islands (Stepanjants 1979) and southern Chile (Galea 2007). A new record of *Filellum* cf. *magnificum* is from the Northern Patagonian Zone of Chile (Galea 2007).

Four species are likely to have a bipolar distribution, including the sub-polar to temperate waters of both hemispheres: *Hydractinia* cf. *borealis*, *Egmundella gracilis* (Figure 3B), *Grammaria abietina* and *Halecium fraseri* (Figure 3H). Both the polyp and medusa stages of *H. borealis* were previously recorded from the British Isles, Iceland, North Sea, and the Atlantic coasts of North America (Schuchert 2001b). *Egmundella gracilis* was for instance recorded from the Pacific coast of Canada (Stechow 1923) and southern Chile (Galea 2007). *Grammaria abietina* is a circumpolar species, ranging southward to the North Sea in the eastern Atlantic, and to southern New England in the Western Atlantic. In the southern hemisphere, it was recorded near Crozet, Kerguelen and Falkland Islands, Tierra del Fuego, and Patagonia (Schuchert 2001b). *Halecium fraseri* was found from the eastern Pacific from Moresby Island to San Juan Archipelago (Ralph 1958) and southern Chile (Leloup 1974; Galea et al. in press); it was equally reported from the northwestern Atlantic, from Narragansett Bay, south of Hope Island (Fraser 1944).

The records of the following eleven species are relatively scattered around the world. Both the polyp and medusa stages of *Bougainvillia muscoides* were previously found in the boreal waters of the Atlantic and Pacific Oceans, the Arabian Gulf and off Mozambique (Buecher et al. 2005). Galea (2007) assigned abundant material of a *Bougainvillia* species to *B. pyramidata*, mainly based on the morphology of the mature medusa. However, it is now recognized that, in both the polyp and medusa stages, intermediate forms between *B. muscus* and *B. pyramidata* may occur (Schuchert 2007), and the distinction between the two is sometimes very difficult using morphological criteria. It is therefore possible that

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the present material assigned to *B. pyramidata* may correspond instead to *B. muscus*, a widespread species found in tropical and temperate waters of the world oceans (Schuchert 2007). There are records of *B. muscus* from the southern Pacific (Schuchert 1996), while *Bougainvillia pyramidata* was mainly recorded from the Atlantic, on the western coast of British Isles (Russell 1953). Besides the present record from Chile, *Eudendrium* cf. *nambuccense* was initially reported from eastern and south-eastern Australia (Watson 1985), but there are additional records from the Pacific coast of Brazil (Nogueira et al. 1997; Marques 2001). *Hybocodon chilensis*, initially described from Chile (Hartlaub 1905), was also reported from New Zealand (as *H. prolifer* in Schuchert 1996, see also Galea 2006b). *Campanulina pumila* was mainly recorded from the northern hemisphere, e.g. North Sea, North Atlantic, Pacific coasts of North America (Cornelius 1995a), and Greenland (Schuchert 2001b). The present record from southern Chile may suggest a bipolar distribution of this species. *Hebella* cf. *dispolians*, is here only tentatively identified based on its parasitic habit (hydrothecae arising from the hydrothecal apertures of *Symplectoscyphus subdichotomus*); both its occurrence and taxonomic status are poorly known, with only two previous records, one from India (Warren 1909) and another from South Africa (Millard 1975). The chief area of distribution of *Hebella striata* is represented by the seas around South America, with records from Argentine Patagonia (Vervoort 1972; El Beshbeeshy 1991), Crozet (Millard 1977), Kerguelen (Vanhöffen 1910), and Falkland Islands (Hartlaub 1905; Blanco 1982), Burdwood Bank (Jäderholm 1905; Ritchie 1907), Magellan Strait (Allman 1888; Hartlaub 1905; Vervoort 1972), Pacific coast of Chile (Hartlaub 1905; Leloup 1974; Galea 2007), and the adjacent Antarctic seas (Totton 1930). *Sertularella fuegonensis* (Figure 4A) was originally found from Tierra del Fuego (El Beshbeeshy 1991; Vervoort 1972, as *S. picta*, p. 114, fig 35A-B), but additional records are from New Zealand (Vervoort and Watson 2003). *Sertularella gayi* is widely distributed in the Mediterranean and eastern Atlantic (Bouillon et al. 2004), but also on the Pacific coast of Argentina (Blanco 1982); it is presently recorded from southern Chile. *Symplectoscyphus subdichotomus* is widely distributed along both Atlantic and Pacific coasts of South America, e.g. Argentina (Blanco 1967a; El Beshbeeshy 1991; Genzano and Zamponi 2003), Chile (Hartlaub 1904; Leloup 1974; Galea 2007), Magellan Strait (Hartlaub 1905; Vervoort 1972), south-western Atlantic from an area situated between Tierra del Fuego, Isla de Los Estados and the Falkland Islands (Vervoort 1972), Kerguelen, Crozet (Millard 1977; Stepanjants 1979), and Falkland Islands (Jäderholm 1905). This species also penetrates into the Antarctic seas (Blanco 1967b). Additional records of *S. subdichotomus* are mentioned from Australia (Ralph 1961) and New Zealand (Vervoort and Watson 2003). *Campanularia mollis* has a complicated synonymy and was found on the Pacific coast of North America (Clark 1876, as *Campanularia everta*), Chile (Galea 2007, as *Orthopyxis mollis*), Tierra del Fuego (Hartlaub 1905, as *C. tincta*, *C. tincta* var. *eurycalyx*, and *Eucopella crenata*), Atlantic coasts of Argentina (Blanco 1976, as *C. everta*, and El Beshbeeshy 1991, as *O. hartlaubi*), Magellan Strait and Falkland Islands (Vervoort 1972, as *C. everta*), Mediterranean (Stechow 1919, as *Clytia mollis*), Russia, Sea of Japan (Naumov 1969, as *C. everta*), New Zealand (Ralph 1957; Vervoort and Watson 2003, as *O. mollis*), Antarctica (Peña Cantero and García Carrascosa 1999, both as *O. crenata* and *O. hartlaubi*).

The remaining twenty two species have a (near) cosmopolitan distribution, but only *Lafoea dumosa* and *Halecium delicatulum* could penetrate into Antarctic waters (Peña Cantero and García Carrascosa 1999). The other species are largely distributed throughout the temperate to subtropical regions, i.e. *Bimeria vestita*, *Cordylophora caspia*, *Turritopsis* cf. *nutricula*, *Coryne eximia*, *Ectopleura dumortieri*, *Calycella syringa*, *Phialella* cf. *quadrata* (Figure 3E), *Modeeria rotunda*, *Filellum serratum*, *Halecium beanii*, *H. tenellum*, *Amphisbetia operculata*, *Sertularella polyzonias*, *S. robusta*, *Plumularia setacea*, *Campanularia* cf. *hincksii*, *Clytia linearis*, *C. paulensis*, *Obelia dichotoma* and *O. geniculata*.

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Finally, several species listed herein could be identified to genus level only. *Filellum* spp. has hydrothecae whose dimensions and morphology do not fit into those of *F.* cf. *magnificum* and *F. serratum*. The present material is sterile and therefore could not be identified to species level. Moreover, it is possible that more than one species occur amongst this material. The material assigned to *Halecium* sp., though morphologically different from its five congeners, is scarce and sterile, and therefore unidentifiable. Also *Symplectoscyphus* sp. is unidentifiable due to the lack of gonothecae.

Some authors (Pickard 1971; Viviani 1979; Lancellotti and Vasquez 1999; Häussermann and Försterra 2005) hypothesized a faunal break at the Peninsula Taitao and the Golfo de Penas (ca. 48° S), at least for shallow water species of the inner fjords, accompanied by a significant change in the species composition. This hypothesis seems to be verified for a certain number of hydroids, e.g. *E.* cf. *scotti*, *L. longitheca*, *G. abietina*, *S. magellanicus*, *K. magellanica*, *P. repens* and *C. agas*, which presently have not been found northerly to 48° S along the Pacific coast of Chile. These species are known to have a sub-Antarctic and/or Antarctic distribution, so they were not expected to be found north of this limit. Conversely, the temperate species *C. caspia* and *C. eximia* seem to be present only north of the Golfo de Penas.

Additionally, a transition was presently observed in two members of the genus *Symplectoscyphus*: *S. filiformis* was widely found between 42–44° S, while *S. subdichotomus* totally replaced the former southerly to 47–48° S. However, *S. filiformis* was originally described from Puerto del Hambre (ca. 53° S, Allman 1888), and Leloup (1974) mentioned *S. subdichotomus* from Calbuco (ca. 41° S). Similarly, our record of *O. belgicae* is from Isla Lavinia (49° S), but this mainly Antarctic and sub-Antarctic species has been equally found south of Tocopilla (ca. 22° S, Leloup 1974).

Several hydroid species (i.e. *E. nambuccense*, *E. scotti*, *E. gracilis*, *F. magnificum*, *H. enersis*, *H. schucherti*, *K. magellanica*, *S. argentinica*, *S. fuegonensis*, *S. jorgensis*, *T. polycarpa*, *H. fjordlandicum*, *H. fraseri*) were so scantly reported in the literature, that their geographical distribution is poorly known.

However, the absence of sampling between 43°50' and 47°50' S, and the very few records of several species, prevent us to associate with certainty the faunal-break hypothesis to the hydroids.

No typical representatives of the Antarctic hydroid fauna were recorded during the present study, i.e. members of the genera *Schizotricha*, *Oswaldella*, *Antarctoscyphus* and *Staurotheca* (see Peña Cantero and García Carrascosa 1999).

In conclusion, numerous hydroid species show affinities partly with the cold-temperate Magellan region, and partly with Antarctica. The remaining species have either a scattered distribution around the world or are (near) cosmopolitan.

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